


Potential Transmission and Resource Evaluation Criteria

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on Corridor and Strategic Transmission Planning Issues
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Purpose for Developing Evaluation Criteria

- Compare alternative resource portfolios at a state level for:
 - Policy development and implementation
 - Long-term transmission planning
 - Evaluate project alternatives
 - DSM, renewables
 - Generation alternatives
 - Transmission alternatives
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Process

- Survey stakeholders in CA market
 - Develop list of suggested evaluation criteria
 - Present info in CEC workshop
 - Receive public input
 - Recommend about 5 all-source criteria to be used to evaluate future resource portfolios and projects
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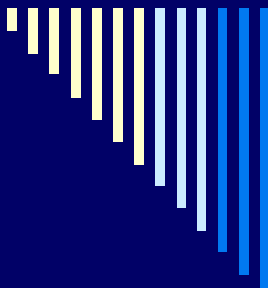
Stakeholders Surveyed

- CPUC and CAISO
 - Consumer groups
 - Environmental groups
 - Generators
 - Investor-owned utilities
 - Municipal utilities
 - Renewable groups
 - Transmission owners
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Background

- Integrated Resource Planning principles in place for 20+ years
 - Resource planning no longer emphasized in early 1990's – “market will provide”
 - Recently, renewed focus on resource planning principles – load-serving entities responsible for resource adequacy
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What Stakeholder-Suggested Criteria Have Not Changed?

- ☐ Reliability
 - ☐ Least-cost
 - ☐ Rate impact
 - ☐ Airborne emissions
 - ☐ Operational flexibility
 - ☐ Public acceptance
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What Stakeholder-Suggested Criteria Are More Recent?

- ☐ Risk quantification
 - ☐ Portfolio fit
 - ☐ Reliability payments
 - ☐ Market efficiency
 - ☐ Seamless markets
 - ☐ Fossil fuel dependency
 - ☐ Environmental justice
 - ☐ CO2 regulatory risk
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Current Minimum Requirements

- Reliability (NERC, WECC, CAISO, utility)
 - Energy efficiency
 - Demand response
 - Renewable portfolio standards
 - Resource adequacy
 - Other
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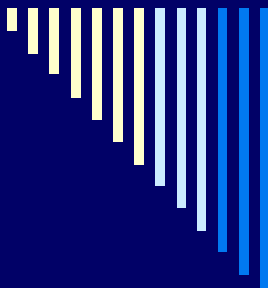
Resource Evaluation Categories

- ☐ Reliability
 - ☐ Least-cost
 - ☐ Risk
 - ☐ Environmental
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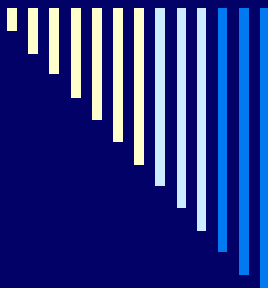
Stakeholder Suggested Reliability Criteria

- Unserved energy
 - Reliability payments
 - Reliability-must-run payments
 - Minimum-load cost compensation
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Stakeholder Suggested Least-Cost Criteria (traditional)

- Present value of costs or benefits from different perspectives (societal, CA, CAISO, non-CAISO, utility, ratepayer)
 - Cost-based, bid-based base case, bid-based expected value market simulation
 - Ratepayer impact
 - Market valuation
 - Inclusion of environmental costs
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Stakeholder Suggested Least-Cost Criteria (more recent)

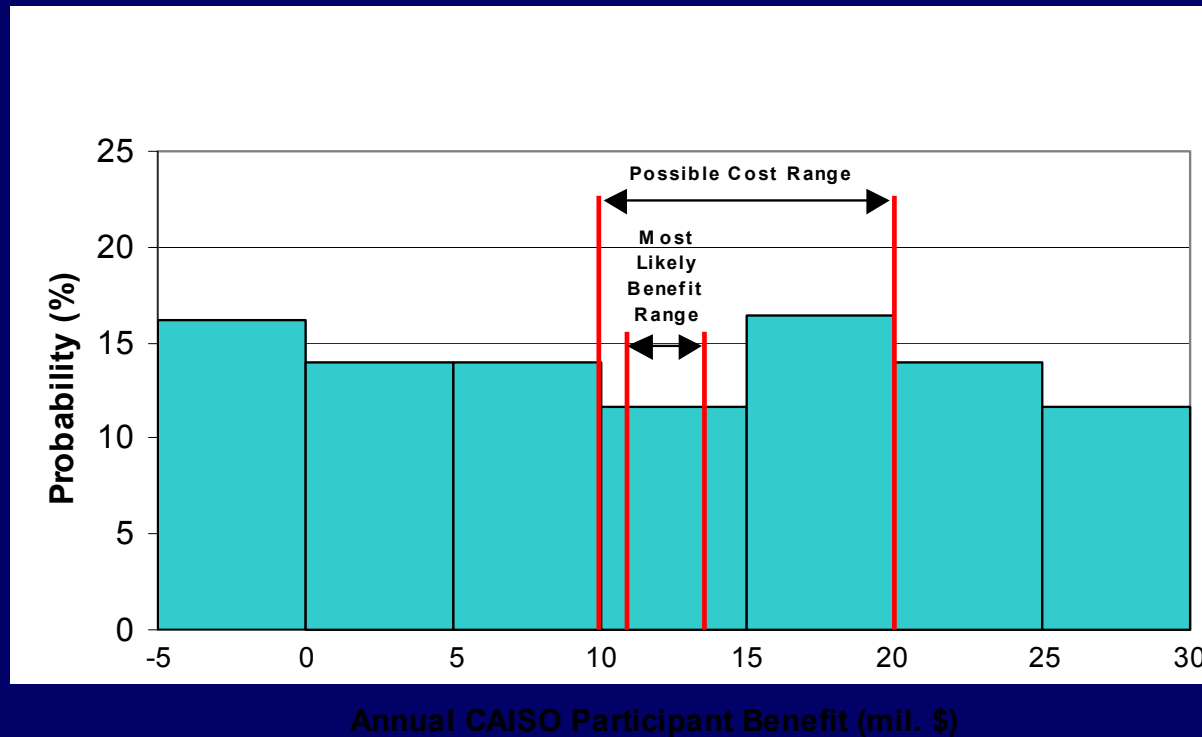
- ❑ Exclude generator profits from uncompetitive conditions
 - ❑ Market efficiency (market price / marginal cost)
 - ❑ Seamless markets (imports and exports)
 - ❑ Sustainable markets for generators
 - ❑ Portfolio fit
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Stakeholder Suggested Risk Criteria

- Dif. between expected and worst-case outcome
 - Qualitative assessment of portfolio histograms
 - 1-2 standard deviations
 - Cash-flow-at-risk (CFAR) or similar measurement
 - Project, credit, counter-party, technology risk
 - CO2 regulatory risk
 - Resource diversity
 - Resource flexibility
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Portfolio Histogram Example (Range of Benefits and Costs For Path 26 for 2013)

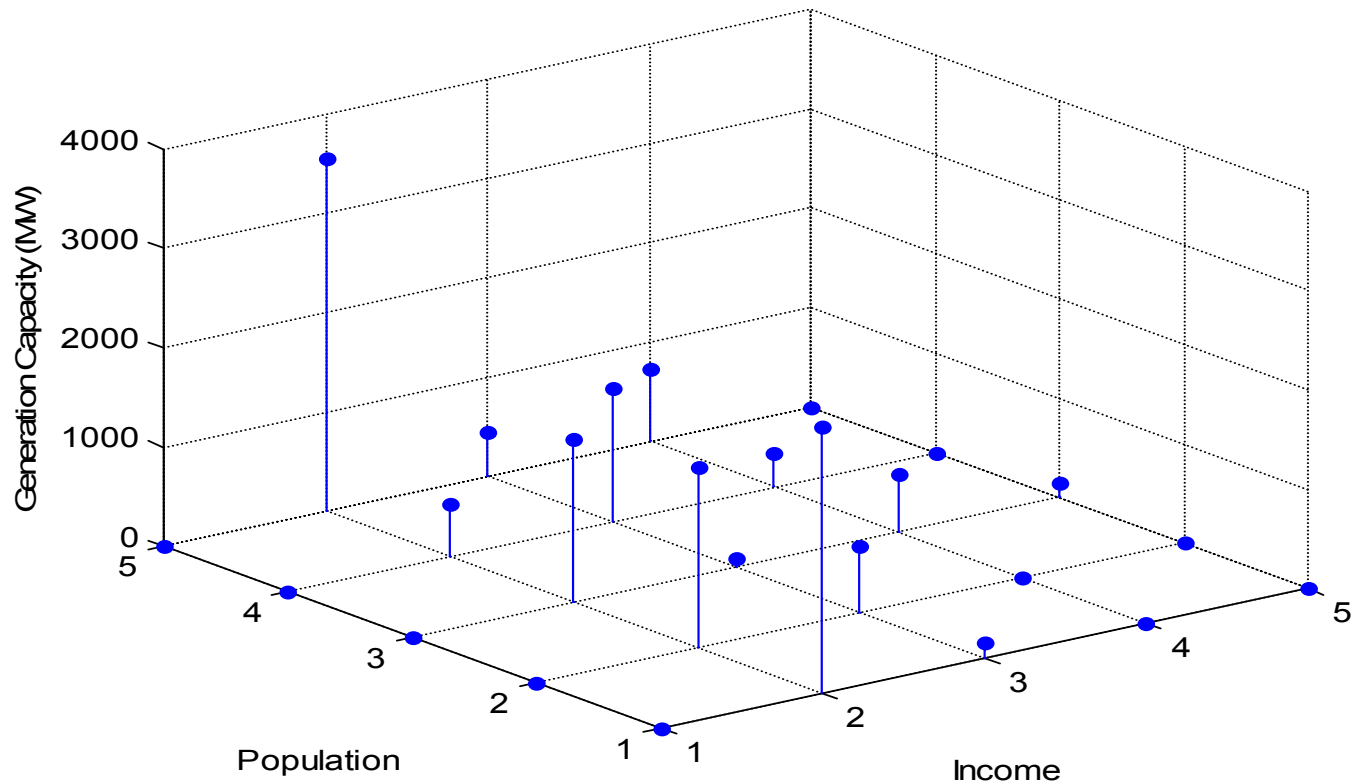


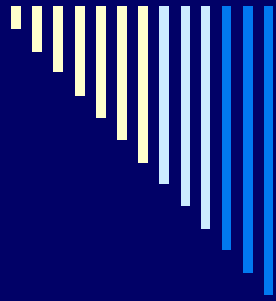


Stakeholder Suggested Environmental Criteria

- ❑ Environmental cost of airborne emissions (see least-cost)
 - ❑ Renewables beyond RPS requirements
 - ❑ Number of miles of new transmission right-of-way, visual and environmental impact
 - ❑ Fossil-fuel dependency
 - ❑ Environmental justice assessment
 - ❑ Once-through water cooling impacts and thermal pollution
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Possible Environmental Assessment





Questions or Other
Suggestions?



Back-Up Information

- Income and population distribution
 - Stakeholder-proposed criteria table
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Income and Population Distribution

Group	Income (\$)	Frequency	Cumulative %
1	0 - 20000	55	3.28%
2	20000 - 40000	758	48.54%
3	40000 - 60000	456	75.76%
4	60000 - 85000	214	88.54%
5	85000 - 1600000	192	100.00%
Total		1675	

Group	Population	Frequency	Cumulative %
1	0-1000	331	19.76%
2	1000-10000	416	44.60%
3	10000-25000	322	63.82%
4	25000-40000	299	81.67%
5	>40000	307	100.00%
Total		1675	